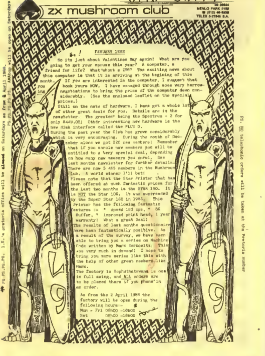
The Factory telephone number is:- 0146 = 30774

zx mushroom club

58 39644
MENLO PARK 0102
☎ (012) 46-8299
TELEX 3-21944 S.A.



FEBUARY 1988

Hi !

So its just about Valentines Day again! What are you going to get your spouse this year? A computer, a friend for life? What about a Z88? The exciting news about this computer is that it is arriving at the begining of this month. If you are interested in the computer, I suggest that you book yours NOW. I have managed through some very harrowing negotiations to bring the price of the computer down considerably. (See the enclosed leaflet on the special prices.)

Still on the note of hardware, I have got a whole lot of other great deals for you. Details are in the newsletter. The greatest being the Spectrum + 2 for only R449.00! Other interesting new hardware is the new disk interface called the PLUS D.

During the past year the Club has grown considerably which is very encouraging. During the month of December alone we got 220 new members! Remember that if you enrole new members you will be entitled to a very special deal, depending on how many new members you enrol. See last months newsletter for further details.

There are now 3 468 members in the Mushroom Club. A world winner I'll bet!

Please note that the Star Printer that has been offered at such fantastic prices for the last two months is the STAR 160. It is NOT the Star 10X. It was superseded by the Super Star 160 in 1986. This Printer has the following fantastic features :- * speed 160 cps, * 8K Buffer, * improved print head, 1 year warranty! What a great Deal!

The results of last months questionnaire have been fantastically positive. As a result of the survey, we have been able to bring you a series on Machine Code written by Mark Berkowitz. This was very much in demand! I hope to bring you more series like this with the help of other great members like Mark.

The factory in Bophuthatswana is now in full swing, and ALL orders are to be placed there if you phone in an order.

As from the 2 April 1988 the factory will be open during the following hours - *
Mon - Fri 08h00 -18h00
Sat 08h00 -18h00

Anne

** PS PS.PS.PS. I.E.'s pretoria office will be **closed** on Saturdays as from 4 April 1988.
PS PS PS PS PS AMAbop will be open on Saturdays.

PS. NO telephonic orders will be taken at the Pretoria number

sinclair

ZX SPECTRUM+2

WHAT IS THIS I SEE NOW?

SPECTRUM + 2 FOR ONLY R449.00!

What next, can this be true?

Yes it is . I.E. has said it before and will say it again - I.E. brings you the best at the best prices!

Look at what you get for this price:-

- RGB port for monitor
- RS232 printer port
- tape recorder built-in
- 128K/48K
- full travel moulded keyboard with EXTRA keys
- reset button
- 2 joystick portsports

AND with all these features a free joystick and 6 games are thrown in just for the fun of it!

The amazing ZX Spectrum +2 has a built-in datacorder – to save you the bother of tape recorders and leads. The advanced 128K memory helps you get the most from the vast universe of games available

Every model comes complete with six free games to start you off, and a free joystick to make you super agile.

With the advanced Sinclair technology you can afford to let your imagination go wild. Because at R449 only your enemies pay heavily

Compare these prices and see what a good deal you are getting:-

Recommended Price	R689.00
I.E.'s Normal Price	599.00
SPECIAL PRICE	449.00
P&P	11.00

ONLY 10 IN STOCK

Brand new, tested, complete with transformer, manual, TV lead, 1 year warranty.

= NO CATCHES =

WE made a special deal with our supplier, we want to make a special deal for you.

FIRST COME, FIRST SERVE.
Only 10 at this special price

best hardware

BE WHO YOU WANT TO BE.

NEW SOFTWARE ON ORDER

comming into stock.

Title	Price
Trantor	32.50
Knight Orc	32.50
Feud	7.99
Nebulus	29.99
Ballbreaker	29.99
Road Runner	26.99
Bubble Bobble	29.99
Mask	29.99
Pride of the Federation	27.99
Labours of hercules	7.99
Hysteria	29.99
Solar Five	29.99
High Frontier	36.99
Xecutor	29.99
Joe Blade	7.99
Wizball	29.99
now Games 4	36.99
Live Ammo	38.99
Ace of Aces	117.00
Masterfile + 3	62.00
hisoft Basic	62.00
Laser Basic	33.00
720°	36.99
Fighter Pilot	29.99
Gryzor	
Tomahawk	38.50
Dizzy	7.99
Thundercats	36.50
Scruples	39.99
Knight Mare	36.99
Gunship	36.99
Tibet	29.99
Tai Pan	29.99
Dark Septre	29.99
Colossus Bridge	42.00
Zulu War	32.50
Battlefield Germany	36.99
Vulcan	36.99
P.A.W.	76.00
Gauntlet II	32.50

We have received a number of queries about the products that I.E. is selling. One of the most common queries has been IS THE ITEM NEW?. the reason that many people have asked this is that the prices are so low.
I have looked into the matter and have the following reassurances for you.-

- ALL goods are new.
- ALL goods are warranted.
- ALL goods come complete, as supplied by the manufacturer. E.G. I.E. does not remove the tractor feed from printers and try to sell it as an extra unit, etc, etc
- I.E.'s specials are "no catch" specials. If they are able to get an item at a good price, they are able to sell it at a good price, and this makes you happy and keeps them happy as well.

Its as simple as that. Now what do you have to say about the whole situation? Quite Good hey? Well our sponsors are GREAT GUYS!

CHARACTER DESIGNER

something that I have very often wanted to do was to design my own character set for my Spectrum 48K. Recently I made a small program to make this easier for myself
The characters are stored in the area of ROM between the address of 15616 and 16384
Characters are stored as 8-bit bytes running from the top to the bottom of each character.
The characters start at character 32 (SPACE) and progress to character 126 (c) Knowing only this , isn't enough because RAM (the pokable section of memory) only starts at 16384.
So you can see that the bytes will have to be read out of ROM nad stored elsewhere in RAM.
Do this by typing in'

```
10  LET x = 64000 FOR q=15616 TO 16384 POKE x,
    PEEK q LET x=x+1  NEXT q
```

now RUN it.

a copy of the character set is now stored in 64000. Despite this, the computer is still reading from the old address.
Type:
POKE 23607,249

Now the computer is reading from 64000. To design the new character set, enter the following program and RUN it

```
 1  LET p=32  FOR q=64000 TO 64760 STEP 8
 5  FOR w=0 TO 7 PRINT PEEK (q+w)  NEXT w  FOR
    w=0 TO 7.PRINT AT 10,10,CHR$ p
10  PRINT AT w,5,"*" PAUSE 0 IF INKEY$ "0"
    THEN INPUT e:POKE q[w,e  PRINT AT 10,10,CHR$ p
    PRINT AT w,0,TAB 3  PRINT AT w,0,peek(q+w)
    GOTO 25
15  IF INKEY$ = CHR$ THEN LET w = -1 CLS  GOTO 5
20  IF INKEY$ = "q" THEN CLS. LET p = p + 1.
    NEXT q
25  IF INKEY$ = "a" and p 32 THEN LET p = p - 1
    LET q - q - 16  CLS NEXT q
30  IF INKEY$ = CHR$ 108 THEN INPUT "Name of
    character set --",LINE a$  LOAD a$ CODE
    64000,760
35  IN INKEY$ = "s" THEN INPUT "Name of
    character set --", LINE a$  SAVE a$ CODE
    64000,760
40  PRINT AT w,5; " ". NEXT w CLS  LET p = p + 1
    NEXT q
45 STOP
```

The program shows exactly which byte of which character it is ready to change. To change the byte, press "0". You will be required to INPUT the byte, either as BINary of decimal. Remember that if you use BIN, there must only be 8 bits, and if you use decimal, the number must be below 255.
The keys to move around in the character set are

a. Jump backwards to the beginning of the previous character
q Jump forwards to the beginning of the following character
1 Jump to the beginning of the current character
0 Allows access to input in order to alter byte
s and l Save and Load character set
Any other key' Move forward one byte

Don't forget that if you load either the program or the code in, that you MUST POKE 23607,254.

This program can be used to make UDG's. All that you need to do is decide which characters you will not be using, and subsitute them for your figures.
I find that if I want to make the characters bold, I have to use everything except the bottom line (last byte) and the left-hand column of pixels. I suggest you draw an 8 x 8 square in pen and design each character in it.

Happy designing.
This article was received from Derek Hulley.

Look out for the review written by Jade Hamburger on the Artist 11 and Art Studio further on in the Newsletter.
This should appeal to those of you who are interested in Graphics, but find programming to much F.T

PSSST

Come on family, computers are not only for the guy or the brainy one in the family! Just look at these games that are available for the whole family, this is the chance to get even or just to improve your general knowledge and to have some fun in general! Mom, now you can get back in your own language, and let the boys get all tangled in their computer jargon!

FAMILY GAMES:-
Blocklands
Snaffle
Word Wizard
Max Headroom
Mastermind
Look sharp
Trivial Pursuit
Trivial Pursuit (Junior Edition)
Micro Trivia

```
****************
*  PSI  POWER  *
****************
```

THIS PROGRAMME RESULTED FORM READING "FORTUNE SECRETS" BY URI GELLER AND "MINDS WITHOUT BOUNDARIES" BY STUART HOLROYD. AFTER THIS OVERDOSE OF MYSTICISM IT WAS INEVITABLE THAT I SHOULD TRY THE MENTAL EQUIVALENT OF SPOON BENDING ON THE QL; WITH SOME SURPRISING RESULTS I MIGHT ADD.

TH
IN
K!

IT WAS THE CHAPTER IN THE HOLROYD BOOK ON ZENER CARDS THAT ACTED AS THE TRIGGER. THESE CARDS WERE DESIGNED BY A CERTAIN DR ZENER, CIRCA 1938, TO PROVIDE NEUTRAL IMAGES FOR RESEARCHERS TO CONCENTRATE UPON. THEY COMPRISED A CIRCLE, A STAR, A PLUS SIGN, WAVEY LINES AND A SQUARE AND IT HAD BEEN MY INTENTION TO DUPLICATE THESE SYMBOLS ON THE QL, BUT IN MY HASTE TO GET INSTANT RESULTS FOR THIS PROGRAMME I HAVE MERELY USED THE NUMBERS ONE TO FIVE.

THE ZENER CARDS WERE INTENDED TO BE USED BY TWO PERSONS TO SEND TELEPATHIC MESSAGES TO EACH OTHER. BUT IT WAS AT THIS POINT THAT I PICKED UP THE GELLER BOOK AND READ THAT, ACCORDING TO HIM, THE HUMAN MIND COULD NOT ONLY INFLUENCE OTHER PERSONS BUT IT COULD INFLUENCE INANIMATE OBJECTS AS WELL. APPARENTLY DURING A BBC TV PROGRAMME, IN WHICH GELLER HAD BEEN THE GUEST, HALF THE WATCHES IN THE UK STOPPED WHILE JUST AS MYSTERIOUSLY AN EQUAL NUMBER STARTED. SO ADOPTING THE PHILOSOPHY THAT WHAT IS GOOD ENOUGH FOR LONDON IS GOOD ENOUGH FOR JOHANNESBURG I WROTE THE FOLLOWING PROGRAMME IN WHICH YOU ATTEMPT TO INFLUENCE YOUR QL.

IN PRINCIPLE TEN NUMBERS, BETWEEN ONE TO FIVE, ARE GENERATED IN A RANDOM ORDER AT LINE 1240. YOU ARE THEN INVITED TO GUESS THESE NUMBERS AT LINE 1320. OBVIOUSLY YOU CANNOT GUESS A NUMBER UNLESS THE QL IS THINKING ABOUT IT AND THIS I ACHIEVE BY PRINTING THE NUMBER WITH BLUE INK ON A BLUE SCREEN SO THAT THE RESULT IS INVISABLE. (LINE 2020 AND LINE 1400).

WHEN YOU HAVE KEYED IN THE PROGRAMME AND YOU SIT IN FRONT OF YOUR PSI TESTER YOU WILL BE PRESENTED WITH TWO WINDOWS; WHICH CHANGE COLOUR AT INTERVALS TO MAINTAIN INTEREST. THE LEFT HAND WINDOW WILL APPEAR BLANK BUT ONLY BECAUSE THE INK AND PAPER ARE THE SAME COLOUR, WHILE THE RIGHT HAND WINDOW WILL CONTINUOUSLY ROTATE THE NUMBERS ONE TO FIVE ALL THE WHILE YOU HOLD THE SPACE KEY. WHEN YOU THINK YOU HAVE FORMED A SUITABLE TELEPATHIC BOND WITH YOUR QL HIT <ENTER> AND YOU WILL BE OFFERED THE NEXT HIDDEN NUMBER.

WHEN YOU HAVE MADE TEN SELECTIONS YOUR CHOICES WILL BE ANALYSED (LINE 1470) AND HELPFUL MESSAGES DISPLAYED. AFTER THREE HUNDRED SUCH SELECTIONS YOUR PSI POWER RATING MAY BE DISPLAYED (LINE 2480). BUT ONLY IF YOU HAVE ONE.

BUT HOW DOES IT WORK? I HEAR YOU CRY. WELL AS THERE ARE FIVE SELECTIONS THERE IS A TWENTY PERCENT CHANCE THAT YOU WILL PICK ANY GIVEN NUMBER. THERE ARE ACTUALLY TEN CHOICES SO YOU WOULD EXPECT, ON THE AVERAGE, TO SCORE TWICE. IF YOU DO SCORE AT THIS AVERAGE RATE THE PROGRAMME WILL INDICATE AS MUCH (LINE 2220). HOWEVER IF YOU CONSISTANTLY SCORE THREE OR FOUR THEN YOU WILL BE IN CLOSE MENTAL CONTACT WITH YOUR QL AND IT WILL ONLY BE A MATTER OF TIME BEFORE THE QUIET MEN IN THE LONG WHITE COATS COME AND TAKE YOU AWAY.

BUT BEFORE THEY DO JUST CONSIDER THIS. I TRIED IT AND CONSISTANTLY SCORED BELOW AVERAGE. NOW SCORING BELOW AVERAGE IS JUST AS INTERESTING AS SCORING ABOVE. SO I CONSULTED THE "MINDS WITHOUT BOUNDARIES" BOOK AND READ THAT DR GERTRUDE SCHMEIDLER OF THE CITY UNIVERSITY OF NEW YORK HAD DISCOVERED THIS FACT IN 1948. SHE FOUND THAT THOSE WHO BELIEVED IN ESP (EXTRA SENSORY PERCEPTION) SCORED ABOVE AVERAGE AND THOSE WHO DID NOT BELIEVE SCORED BELOW. SHE CALLED THEM SHEEP AND GOATS! THAT'S THE BIT I DIDN'T LIKE.

SOMETIMES PEOPLE PRE-SCORE OR POST-SCORE WHICH MEANS THAT THEY CONSISTANTLY GUESS THE PRECEEDING OR FOLLOWING NUMBER. IF YOUR SCORE RATE IS LOW THIS COULD BE HAPPENING TO YOU. YOU CAN CHECK THIS ON THE DISPLAY. IT IS MY INTENTION TO ALLOW FOR THIS POSSIBILITY IN A FUTURE VERSION OF THIS PROGRAMME WHICH COULD BE OFFERED THROUGH INFORMATION ENTERPRISES. IF YOU ARE INCLINED TO DISMISS ALL THIS AS SO MUCH RUBBISH REMEMBER THAT MR GELLER IS A MULTI-MILLIONAIRE AND APPEARS LIKELY TO REMAIN ONE.

```
100 REMARK 07  1290
110 REMARK ******* PSI TESTER *******
120 REMARK ***************************
130 REMARK * THIS PROGRAMME          *
140 REMARK * ATTEMPTS TO             *
150 REMARK * INVESTIGATE YOUR PSI    *
160 REMARK * POWER BY INVITING YOU   *
170 REMARK * TO GUESS RANDOMLY       *
180 REMARK * GENERATED NUMBERS. THE  *
190 REMARK * PROGRAMME INDICATES     *
200 REMARK * YOUR SCORE              *
210 REMARK ***************************
220 :
230 :
240 :
250 INIT
260 HEADING
270 REPEAT LOOP
280 NUM_OF_REPEATS%=NUM_OF_REPEATS%+10
290 GENERATE
300 COLOUR
310 FOR NM=1 TO 10
320 DISPLAY
330 IF NM>9:BEEP 0,10,100,5000,0,1:PAUSE 50
340 GUESS
350 NEXT NM
360 ANALYSE
370 PRINT_RESULT
380 IF NUM_OF_REPEATS%>300:PRIZE:IF PFLAG%:EXIT LOOP
390 MORE
400 IF EFLAG%:PRINT_RESULT:EXIT LOOP
410 END REPEAT LOOP
420 CLOSE#3:CLOSE#4
430 PAUSE:BEEP:STOP
440 :
450 :
460 :
1000 DEFINE PROCEDURE INIT
1010 PAPER 5:BORDER 4,7:CLS:CLS#0
1020 OPEN#3,SCR_512X256A0X0
1030 OPEN#4 SCR_512X256A0X0
1040 WINDOW#3,100,50,120,70
1050 BORDER#3,4,0
1060 WINDOW#4,100,50,270,70
1070 BORDER#4,4,0
1080 CSIZE#4,3,1
1090 CSIZE#3,3,1
1100 DIM        NUM%(10)
1110 DIM NUM_GUESS%(10)
1120 DIM       SCORE%(3)
1130 TOTAL%=0:NUM_OF_REPEATS%=0:AV%=0:NE$=''
1140 END DEFINE
1150 :
1160 :
1170 :
1180 DEFINE PROCEDURE DISPLAY
1190 CURSOR#3,30,10:PRINT#3,NUM%(NM)
1200 END DEFINE
1210 :
1220 :
1230 :
1240 DEFINE PODCEDURE DENERATE
1250 FOR NM=1 TO 10
1260 NUM%(NM)=RND(1 TO 5)
1270 NEXT NM
1280 END DEFINE
1290 :
1300 :
1310 :
1320 DEFINE PROCEDURE GUESS
1330 BEEP 999,100
1340 AT 12,0
1350 PRINT'HOLD SPACE. CONFIRM WITN (ENTER)'
1360 DIGIT%=1
1370 REPEAT GUESS_LOOP
1380 CLS#4:CURSOR#4,30,15:PRINT#4,DIGIT%
1390 PAUSE:IF KEYROW(1)=1:EXIT GUESS_LOOP
1400 DIGIT%=DIGIT%+1:IF DIGIT%>5:DIGIT%=1
```

Unfortunately because this program is so long, we have had to split the article over 2 issues of the magazine. Look in next months newsletter for the other half. It really looks as though this program will be worth waiting for!

USE AND LEARN

For the beginner on his computer, MICROL USE AND LEARN is a fun package, which is interesting and fun to use, while learning all the way.

this exciting package has the following features -

- YOUR PERFECT SPECTRUM STARTER KIT
- 25 BASIC PROGRAMS YOU CAN USE IMMEDIATELY

GAMES	GENERAL/ EDUCATION	PROGRAMMING AIDS
Deflector	Music Composer	Screen Designer
Parachute	Computer Term Glossary	Graphics Workbox
Codebreaker	Solar System	Text Editor
Tank	Star Atlas	Bar Graph & Pie Charts
Quiz	World Atlas	Bubble & shell sorts
Puffball	Tepoltie	Number Conversions
	Addictive Addition	Memory Map Monitor
	Sentence Generator	Variables Monitor
		RAM Test

- PLUS 120 PAGE USE AND LEARN BOOK –
- Full listings of all 25 USE AND LEARN programs.
- Detailed description of programming techniques
- Hundreds of useful facts, hints and tips to develop your program – writing.

"TREMENDOUSLY VALUABLE
GET THE BEST
OUT OF SPECTRUM BASIC"
WHAT MICRO

"A GREAT ASSET
FANTASTIC VALUE
VERY HIGHLY
RECOMMENDED INDEED"
ZX COMPUTING

"EXCELLENT"
SINCLAIR USER

Die tekort
aan
Afrikaanse
Artikels is
te wyte aan
die tekort
aan
Afrikaanse
bydraes.

SEIKOSHA

SL SERIES

Are you interested in the best available?

SEIKOSHA is the best available - and - they have just produced an even better printer for the work situation!

SEIKOSHA'S latest workhorse is the SL132 Al.

This 132 collumn printer is an absolute bargin, and at the price you just can not beat this true value for money deal.

The features of this remarkable 24 pin printer are:-

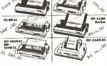
Versatility, excellent printing quality, the real 24-pin printer

- *Fine letter quality printing by 24 pins*
- *Letter quality printing speed 54 cps*
- *Featuring EPSON LQ® and IBM® mode*
- *Quiet even for executive office (as low as 52 dBA)*
- *Variety of printing styles-Double Width, Bold Double-Strike Italic, Superscript/Subscript and Underlining*
- *10 kinds of high resolution dot addressable graphic printing*
- *Automatic paper loading and ejection system*
- *Download character setting maximum 128 characters*
- *Switch margin setting by the front panel*
- *Built in 16 K buffer*
- *Optional Automatic Cut Sheet Feeder*

Normal Price	R1 998.00
Special introductory Price	R1 099.00
Freight Charge	45.00

SEIKOSHA

... an unbeatable range of printers, with unbeatable after sales service, ...an unbeatable combination.



MAKE YOUR BUSINESS SUCCESSFUL WITH: SEIKOSHA

INTERFACE BOARD
JUST LOOK WHAT YOU GET

LOOK what has happened! I.E. is able to offer the QL at the unbelievable price of only R499.00!

VERY SPECIAL OFFER

The QL is one of the best bargin for your money, because just look what this computer has to offer:-

- where else can you get a standard 128K machine which you can enlarge to a total of an unbelievable 896K at such a low price?
- where else do you get a WORDPROCESSOR, SPREADSHEET, DATABASE AND GRAPHICS PACKAGE all thrown in for no extra money?
- where else do you get a COMPLETE users manual on the software and hardware included in the price?
- The QL can offer you all this and much, much more. Don't let this offer slip you by!
- The QL is also not only limited to micro-drive cartridges, but you can always expand to disk drives if they catch your fancy!

Price	R488.00
P&P	15.00
Total	R514 00

ONLY WHILE STOCKS LAST

This offer valid while stocks last

Send a SAE for QL Product list and reviews. Stuur 'n gefrankeerde koevert vir QL produkte lys en oorsig van dir rekenaar.

RESPONSE

Last week a very concerned Club member phoned I.E. to place an order and was astounded at the low prices of both software and hardware. He enquired rather suspiciously whether all their goods were new. The reason for his asking this, is that he thought that I.E.'s goods had to either be second hand or copied. I would like to reassure you that all goods are new and that all hardware sold is also new and under guarantee. If any second hand goods are offered for sale, then it will clearly be marked as such.

As a matter of fax ...

I would just like to sort out some confusion that seems to have arisen as far as orders are concerned and the factory. ALL postal orders are still to go to the old address in Menlo Park. The reason for this is that the post office in Garankua near the factory has to cater for such a large local population, that I.E. was not able to get a box there. All orders are received at the Menlo Park post office and then faxed to the factory, where your order will be processed.

ROMANTIC ROBOT

MULTIPRINT(TM)

Thinking of expanding to a Printer?

I.E. has the ideal interface for you!

The MULTIPRINT is the most versatile and yet the easiest to use Spectrum Printer interface!

SOME of the advantages of this interface are

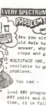
- Fully compatible with Spectrum 48K, 128K 128K +2, Interface 1 and Opus Discovery.
- FREEZE BUTTON to activate the MULTIPRINT anytime.
- A joy to use with its being fully MENU DRIVEN, WITHscreen prompts, one touch commands, error-trapped to name a few
- FULLY PROGRAMMABLE - line feed, width, and spacing margins, various COPY types, and sizes.
- Uses LList, Save, COPY, LPrint.
- has a built in MULTI-TOOLKIT

THE ULTIMATE MULTIPURPOSE CENTRONICS PRINTER INTERFACE

ALL this and more with the MULTIPRINT. Get your interface now while stocks last. Remember that this offer lasts only as long as stocks last!

Normal Price	R179.98
Special Price	165.00
P&P	2.00
Total	167.00

EVERY SPECTRUM OWNER SHOULD HAVE ONE



PROBLEM: HOW DO I PUT ALL OF MY SOFTWARE ONTO TAPE, CARTRIDGE, DISK OR WAFER?

Are you sitting with the same problem as old Awie here? Well, he has found the answer, why do you not follow in his footsteps and get rid of all your problems?

MULTIFACE ONE, 128, and THREE are now available to get rid of all those copying problems.

SOLUTION: WITH THE multiface!

You can -

- Load ANY program as usual, stop at ANY point and SAVE it, it works EVERY time, it is fully automatic, idiot-proof, just sit there and watch. (EVEN Awie got it right the first time!)
- Needs NO extra software.
- Takes NO part of SPECTRUM RAM - has ALL in its own 8K ROM AND 8K RAM.
- Built-in MULTI-TOOLKIT with extensive facilities to study/modify/develop programs. Essential for hackers.
- Extremely simply to use, friendly, 100 % reliable, fully error-trapped, guaranteed PURE MAGIC!

Multiface one	R169.00
Multiface 128	185.00
Multiface Three	195.00
P&P	2.00

Just choose the model suited for your purposes and computer and just let all your problems fade away

A new
Print-Star is born: gemini 160

for those of you who are looking for a quality printer at a budget price, the STAR GEMINI printer is the answer!

I.E. has had these printers on special for the past two months. Stocks are very low on these printers now, but a substantial amount of the STAR GEMINI 160 PARALLEL are still available.

The price is an unbelievable R389.00

This very robust little 80 Collumn printer is the ideal buddy for the Spectrum

Other features include:-

Remarkable features:
Vertical and horizontal tabs, continuous underlining, column scan, bit image graphics, 7 or 8 bit selectable interfaces, form length selection by dip-switch and many more

The characters:
8 international character sets plus ASCII, proportional printing, download characters, graphic mode.

The System:
Serial 9 wire impact dot matrix-printer 160 characters per second, 200 characters in high speed spacing, 8 kbyte print-buffer, graphic capabilities.

Paper feed
Friction and push tractor feed, single sheet inserter

star The Computer Printer

R389

multiface 3 NOW AVAILABLE EXCLUSIVELY FOR SPECTRUM 3

Friendly Face

MICRODRIVE UTILITY

BEYOND TAPE TRANSFER — Menu structure eliminates entry of Microdrive commands.
CHOICES selected by single digit entry
SEPARATE ROUTINES merge with any version of Masterfile and Tasword Two, suitable for daily professional use
CARTRIDGE BASED routine aids loading and file management and duplicates itself
WITH 5000-word Instruction Manual

Normal Price	R26.99
Special Price	17.83
P&P	1.15

THE ART STUDIO VS THE ARTIST II

The OCP Art Studio and the Artist II by Softechnics are the two most widly acclaimed Spectrum drawing programs. They have both received the acollade of being a ***Sinclair user 5 star Classic*** and both give the user complete control over the Spectrum screen, but how do they fare against each other?

SCREEN LAYOUT

On both programs the top few lines of the screen are dominated by menu bars. These menus can be pulled down over your work to reveal a number of options which can then be higlighted and used. This sytem of pull down menus works extreemly well and effieciently and contribites greatly to the overall success of the systems. On the AII the bottom rows of the screen have a number of icons which are used for various functions which i will explain later.

HANDELING OF SCREEN CURSOR/POINTER

The AS and AII are both completely cursor reliant. Both programs' pointer can be controlled by use of keyboard, kemspton joystick or mouse. When using the AII , the keyboard controls can not be re-defined. The AS cursor is intelligent whereby its speed is increased the longer the movement keys are pressed. I found the AII icon cursor to move at a much slower pace than the pointer of AS. I felt this was a big drawback to the speed of the program.

COLOUR ATTRIBUTES

The AII and AS can change the colour of the screen's paper, ink and border as well as selecting bright and flash options.
The two utilities also use inverse, whereby pixels are inverted on the screen; and an over function where pixels are placed over those already on the screen. The AS can **only** select these options by the menu labelled "ATRIBUTES", but the AII can chose these attributes in a number of ways. Firstly you can use the "MODES" pull down menu as like AS, but one can also select the "COL" (colour) icon at the bottom of the screen. The keyboard keys 1-6 can be used as well. The colours you chose are displayed on the "COL" icon, which makes it easy to see what colour you are drawing with immediately.

DRAWING OF PRE-DEFINED SHAPES

The AS wins hands down with the drawing of pre-defined shapes. The AII can, by selecting the appropriate icon, draw lines, circles (filled or empty), ellipses (filled or not) and rectangles (again can be drawn filled) The AS can also draw those shapes (excluding the eclipses) with the inclusion of triangles and rays. Another feature that the AS has, is that an "elastic" option can be highlighted, which, when drawing circles, rectangles etc, stretches the shape as the joystick is moved ie: instead of ploting the centre dot for the circle and then the radius, this option allows you to plot the centre and strech and contract the circle until the required shape is reached. I found this to be a very helpful extra when accurate work was required.

→

NOW AVAILABLE Artist II (48K) R57.00 Artist II (128K) R67.00

Although the AS outclasses the AII in this area it is important to note that all of the patterns from the AS can be reproduced in the brush option of the AII, but time is needed to define the procedures which always proves to be a great *hassel* .

FILLING A DESIRED AREA

If a regular or irregular shape has been drawn, and the user would like fill in the area with a desired texture or pattern, this option will work wonders. Both programs utilise this technique to the fullest and they both offer a wide variety of patterns. The AS offers 32 textures while the AII has 16. Both programs use different textures, but once again it is wise to note that both programs textures can be re-defined. Having chosen a fill texture, the AII will display the current pattern in a small icon box in the bottom right hand corner of the screen.

UNDO

If at any stage during your drawing you have made an error (which will happen quite often!), you will find this option a blessing. This facility removes the last procedure done by the user (except on the AS after magnify mode has been used.). The AII can also bring back the work you have just undone ie "an undo undo !". This is also very useful.

MAGNIFYING

For those detailed drawing or removing of tiny blemishes to your art work this option is very powerful. In the mag mode pixels can be placed and removed at great accuracy and this can really polish up your work (Also it is interesting to see what a colour clash looks 8 times its normal size.) In the AS three stages of magnification can be optained, 2x, 4x and 8x normal size. The latter produces a portion of the screen at a size where the pixels are represented largly. In the AS the entire screen is removed and the enlarged version of your drawing is shown, so one must return to the main screen in order to check the true size and nature of your work. The AII divides the screen in two in mag mode, showing the enlarged work on one side and the true size on the other. This is much easier to work with BUT only one magnification size is available, which makes detailed work more difficult to obtain.

AANDAG!!! VEGVLIEENIERS!!!!

Vir die van julle wat daarvan hou om in jou eie sitkamer die lugruim in te vaar is die speletjie ACE 'n moet! Ek vlieg al lank aan baie simulators en ACE is beslis die heel beste sover. As jy lank Spitfire 40, Flight Simulation en die F-15 Eagle gevlieg het, raak jy gou buite beheer in hierdie vinnige vliegtuig. Jy raak skaars aan die joystick dan reageer hy al. Jy het verskeie keuses bv. jy kan in die somer, winter of nag vlieg. Jou vyande wissel van SAM's, tenks, verskillende soorte vliegtuie, helikopters en skepe. 'n Uitskietstoel en mid-air refueling is luukses tot jou beskikking. Jy het nege vlakke van spel en jy kan ook twee spelers speel - een vlieg en die ander een hanteer al die verskillende soorte wapens. Dis die naaste aan werklik vlieg wat jy ooit sal kom in jou eie sitkamer. Bestel dit nou - jy sal nie spyt wees nie!

FOCUS ON

Van Mnr TOP GUN, King Williams Town.

Baie dankie vir die interressante bydraetjie. Die speletjie is nou beskikbaar op die games compilation :-

HIT PAC vol. 2	R36.99
Includes Ace, Into the Eagles Nest, Betty, International Karate, Shockway Rider, Light Force	
ACE	R15.99

MACHINE CODE

For the intrepid Spectrum explorers, Mark Berkowits has compiled a special series of articles about the ROM of the machine and machine code. This very informative series is written in such a way as to teach while informing. These are the type of articles that we are looking for to publish in the newsletter. Show that you care about your newsletter and see what you can come up with.

PART 1

Machine Code Tape Header Reader

Mb SOFTWARE PROJECTS

One of the least explored and certainly most fascinating areas of our favourite machine is the ROM It contains an incredible number of routines just waiting to make your machine code programming easier.

The particular routines I am going to use here now are some that we have all used in our time, from BASIC, yet probably without even wondering about what else we could do with them They are:

1) The ROM tape header reader
2) The ROM restart routine for printing to screen

Every time you use the BASIC commands "LOAD","SAVE","MERGE" or "VERIFY" the routine at ROM address #0556h is run to read the header information being sent from the cassette By simply changing the starting information (PARAMETERS) in the registers used by the routine we can then place the header data where we want it, to manipulate from machine code or even BASIC !

Let me demonstrate:

I like to describes my machine code routines in the following way:

ENTRY CONDITIONS: i.e what must be in which registers and what
: locations before the routine may run
: e.g HL= start , BC= counter , etc

EXIT CONDITIONS: i.e what will be in which registers and what
: locations after the routine is run
: e.g HL= end+1 , BC= zero , etc

REGISTERS USED: Merely a list of all registers used by the
: routine, so that you can save them on the
: stack or elsewhere in memory if you do not
: want them overwritten
: e.g AF, BC, E, H, IX , etc

I will be using this standard throughout my program and supporting notes. I have also assumed that you can get your hands on a good Assembler program (I'm sure I.E would oblige to sell you one of the superb programs on the market!) If not, a BASIC routine to allow entry of the HEX CODE is supplied after the listing
Also, read up on the "RANDOMISE USR" expression to RUN any machine code you may have entered

→

THE ROM HEADER READER ROUTINE:

```
ENTRY CONDITIONS. IX = start of free area in RAM
                : DE = Number of bytes to read from tape (17 normally)
                : A  = zero
                : Carry flag SET
```

EXIT CONDITIONS: "DE" number of bytes will be read from the tape header into memory locations starting from "IX".

REGISTERS USED: Assume all (AF, BC, DE, HL, IX, IY & alternates)

.. and this is the actual routine

```
HEX CODE        ASSEMBLER MNEMONIC              COMMENT

                     ORG  29092
DD214871        READ LD   IX,29000              : free area = 29000
DDE5                 PUSH IX                    : store on stack
111100               LD   DE,17                 : No of bytes to read
AF                   XOR  A                     : zero to accumulator
37                   SCF                        : SET carry flag
CD5605               CALL #0556                 : ROM routine
DDE1                 POP  IX                    : all bytes read ?
30EE                 JR   NC,READ               : if not then more..
```

Another well-used ROM routine is one of the print routines. It is called a RESTART routine and will print the CHARACTER in the A-register (ACCUMULATOR)
But remember, garbage in – garbage out ! Do not try to print a character that is not between ASCII 32 and 164 (Check the back of the Spectrum Handbook) You're liable to just get something wrong if your values are incorrect because EVERY character can sometimes have a special or implied meaning !

Let's have a look at a simple working routine, which, although not not part of the actual tape header reader, shows what I've described.

```
ASSEMBLER MNEMONIC        COMMENT

TEST  LD   A,65                 :The ASCII code for the character "A"
       RST  16                   : The ROM restart routine
       RET                       : END.
```

Now DON'T PANIC ! The character "A" was certainly printed on the screen, but probably in the bottom section, and so the BASIC message "0:1 OK" has overwritten it ! If you use the "PAUSE" expression you could hold the character on screen long enough to read before the BASIC program to run the machine code ends
But this is not the only alternative The best method would be to load the System Variable TV_FLAG (23612) with zero before running the program, and this way the printing will all take place in the upper part of the screen. This is how to do this in machine code

→

```
HEX CODE            ASSEMBLER MNEMONIC          COMMENT

AF                  XOR  A                      : Zero into A-register
323C5C              LD   (23612),A              : and store in TV_FLAG
```

This routine would preceed the previous routine to print the "A" at the top of the 'page', and is the second part of our cassette header reader program.

Let us advance a step further now and write an easy routine to clear the screen display area.

ENTRY CONDITIONS: None needed (The routine sets them up itself)

EXIT CONDITIONS: Take a guess ! (One cleared screen ,of course!)

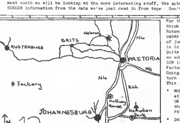
REGISTERS USED: HL, BC, A

```
HEX CODE            ASSEMBLER MNEMONIC          COMMENT

210040                   LD   HL,16384          : Start of screen area
01001B                   LD   BC,6144           : No. of bytes in area
AF                  CLS  XOR  A                 : Set A-reg to zero
77                       LD   (HL),A            : overwrite byte on screen
23                       INC  HL                : point to next byte
0B                       DEC  BC                : decrement counter
78                       LD   A,B               : Method used to check if
B1                       OR   C                 : BC = 0
20F8                     JR   NZ,CLS            : If not than carry on...
```

This routine does not actually do any more than just overwrite all the dots on the screen, that is, it ignores the colours of the PAPER and INK in the attributes area, but it is sufficient for our needs.

Next month we will be looking at the more interesting stuff, the actual setting up of the SCREEN information from the data we've just read in from tape. Don't miss it.



For those ignorant sods who think that the Factory is in Botswana and not BOPHUTHUTSWANA, this is a true scale of just how far the Factory is in fact from Pretoria. Quite close hay?!! And as an added bonus the MORELA SUN is only 3.5 KM from the Factory!
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- MUM can do her shopping at the very well stocked OK just up the road from the Factory. A PICK 'n PAY will also soon be open.
- DAD can go to the factory to get whatever he needs for his system. (or the latest special!)
- THE WHOLE FAMILY can go to the Morela Sun for lunch and the rest of the day or weekend!

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BRAIN POWER

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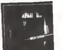

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RRM1 R1[illegible]

multiface 128

multiface 3

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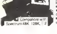

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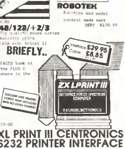
BRIEFLY..

For DISC INTERFACES look at the review on the PLUS D interface elsewhere in the Newsletter



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Digger Barnes	26.67
Master of the lamps	41.10
Thing on a Spring	29.50
Fighter Pilot	42.10
T.L.L.	29.99
Strike Force Harrier	34.70
Jet Set Willy - The final frontier	29.99
Pinball Wizard	30.50
Dopplеganger	31.90
Cauldron	35.00

Titles on Disc	Price
Bruce Lee	R58.15
Highway Encounter	50.42
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Killer Gorilla	46.63
Slapshot	54.39
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The Knife (Disk Editor)	49.63
hisoft Pascal ((CP/M compiler/editor)	89.00
Hisoft C (Two compilers for the price of one! [AMSDOS/CP/M]	185.05

MODEM.

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Probably one of the biggest advantages of the BELTEL system is that you can do your own home banking. With the electronic banking services you can see your current account balance, print a statement, transfer funds and pay bills without even getting out of your armchair. Barclays, Standard Bank and Allied Building Society are already on line - with more to follow soon.

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Just look below for the relevant prices for your system

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Nodaptor	R179.00
Modem	199.00
P&P	2.00

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Modem, incl software and cable	R199.00

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Orc Attack	14.99	7.99
Run for Gold	14.99	7.99
Rally Driver	16.99	9.99
Dandy	19.99	14.50
Pub Games	29.99	19.99
Camelot Warriors	19.99	11.50
Thriller Pack, incl View to a kill, Friday the 13th, Code name Mat II, Test Match, The Pyramid, Beaky and the egg snatchers	29.99	22.99
Aztec	14.99	7.99
IBM & COMPATIBLES SOFTWARE		
Backgammon	49.99	39.99
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Boulder Dash II	49.99	39.99
Music construction set	59.99	49.99
QL SOFTWARE		
Decision Maker	89.00	69.00
Project Planner	105.00	89.00

CEREBRUM

This is one of the few sets of programs that are available in Afrikaans and English! Now is the time to get this set, as these special prices are only valid for one month.

Hierdie stel programme is die enigste opvoedkundige stel beskikbaar in Afrikaans. As U in U kind se toekoms belangstel, nou is die tyd om die stel aan te skaf.
Die bepaalde peil van hierdie programme is vir junior laerskool leerlinge.

Die stel bevat die volgende titels -

Tafels is Pret/Tables are fun	R23.99
Optel en aftrek kombinasies/ Addition and subtraction combinations	23.99
Tel en getalbegrip/count and number concept	15.99
Optelbegrip/concept of addition	15.99
Optelsomme/Addition sums	11.99
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Vermenigvuldig en deel/Multiplication and division	11.99
Woordsomme/Word problems	20.99
Die Toets/The Test	7.99

Flying hi!

For those of you who are interested in Flight and Flying, then take a close look at this list of Simulation games which has been specially put together for you. Please note that not all the games are in stock, so if you are interested in a particular game, please enquire about availability and stock to avoid disappointment!

AIR-COMBAT-EMULATOR.

Title	Price
Acrojet	R33.79
Ace	36.99
Ace II	36.99
Ace of Aces	30.50
Airwolf	29.99
Battle of Britain	29.99
Biggles	38.15
Blue Max	25.99
Buck Rodgers	19.99
Death Star Interceptor	26.99
Delta Wing	22.99
Flack	22.50
Fighter Pilot	31.99
F15 Strike Eagle	36.99
Flight Simulation	24.99
Gunship	37.99
I.C.U.P.S.	29.99
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Heathrow Airport	28.95
Harrier Attack	29.99
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Space Hunter	11.50
Sky Ranger	14.50
Sky Fox	23.40
Spitfire 40	37.99
Star Strike 3D	23.99
Starfire	26.99
Strike Force Harrier	37.99
Their Finest Hour	39.20
Tomahawk	37.28
Top Gun	29.99
T.L.L.	17.75
Durrel Big 4 (incl. Combat Lynx)	36.99
Arcade Hall of Fame (incl. Raid over Moscow, Flack, Blue Max)	32.50

Please note that this a list of the available Flight Simulators for the Spectrum. Nor all of these games are in stock, so please enquire about availability. Thank you for your co-operation.

solutions

A load off their shoulders

THE LARGEST MICRO-COMPUTER CLUB IN THE WORLD

Is running into problems, and we need, YOU our Club members to help us out!

Because the Club has expanded so much during the past year, we are unable to give our personal attention to all the problems that come streaming in to us every day from desperate Mushroomers, and as a result many problems lie unattended for a long time. Even the simplest problems which can be solved in a tick.

What we would like to try, is to have a contact person in as many towns and cities in South Africa, South West Africa, and Zimbabwe who we can put the people in that area onto, and in this way help to solve all the problems.

Now for the good news!

This is not intended to just be a help-line for desperate users, but also a get-together group where members can get together on a regular basis to talk about their computers, give each other tips and advice on programmes or programming, and then to report back to the Club. Any big problems that can not be solved in these groups, or that the Group leader, (contact person), can not deal with, we will certainly be glad to help.

These contact persons will also help to filter the problems, and in this way we will be able to give ALL our attention to the big problems that come to us and to give a satisfactory answer.

Any members can apply to become a contact person, as long as you re over the age of 16.

So for all you members who enquired when the Club meets, here is your chance to get a group together and to do just that without have to travel to far.

Jade Hamburger has sent us this very extensive review comparing ART STUDIO and ARTIST II. As this review is a rather long article, it has been split in to two articles and the follow up will be published next month. The second half of the article covers.- WINDOWS, PRINTING, MISCELANEOUS and the CONCLUSION.

The following abriviations have been used in the article.-
ART STUDIO = AS
ARTIST II = AII

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For Sale ZX Spectrum 48K, Learn Basic Programming package, Currah Microspeech synthesiser, DK'tronics light pen, Sinclair printer and paper, software, books, computer and printer stands with switches. Everything as new. R700.00. Phone Morris in the evenings at (011)-902 5460

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Te Koop: Spectrum 48K met.- speletjies, handboeke, ingeboude reset en verkoelings eenhede. Ideaal vir die nuwe jaar. Waarde R255 ono. Skakel Kokus (012) 57 1986

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FAMILY TREE PROGRAM. This prize-winning 48K program allows you to enter record update your family tree. Send R10 to Stephen Hirsch, 1 Ernst Whitcutt Road, Cowies Hill, 3610 for a tape copy.

For Sale Opus Discovery, complete Disc system for Spectrum includes centronics printer port, joystick interface, power supply and 3.5" Discs for R550.00. Interface 1 and microdrive R200.00. Tel (041) 53 1412

FOR SALE Opus Discovery diskdrive for 48K or 128K Spectrum including printer cable and 25 floppies for only R485.00. ZX Microdrive plus 10 cartridges only R100.00. GM1211 Amber monitor only R135.00 Telephone Mr E.H. Odendaal (0401) 32158 work, (0431) 403665 home. Please note different codes.

I wonder if a member of the Club could help me with a program I would like to work on from the magazine 'ZX Computing' in the April 1987 issue. The program is 'comic strip' on page 19 and concerns the machine code part On entering the first 22 lines of numbers the cursor disappears and the screen will not scroll. As there were no more issues of this magazine after the June issue I do not know if there is a bug or not or am I entering the numbers incorrectly. I would appreciate any assistance. I am still trying:

Can you perhaps help? Write to the Club with your answers. This query was recieved from G.E. Dolan from Southfield.

NOTICE BOARD

DID YOU KNOW?

We have received some answers from members for those of you who are in a bit of a spot.
N. Bishop sent us this information on ARCONOID Get over 25000 and when you get onto the high score table type in your name as PBRAIN. A message will then appear telling you to push space to cheat. You will appear on the last level you played on and you will also get all your lives back.

Some POKES for those of you who enjoy changing and cheating in your games, here is some info for you.

For those of you who could not get past part 1 in the game FREDDY HARDEST, the access code for part 2 is .897653. Good luck.

Now for some pokes.

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AUF WIEDERSEHEN MONTY
CLEAR32767 LOAD""CODE
RANDOMISE USR 32799
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QUESTIONS

We have received this urgent question from one of the Club members. We were not able to give a full answer. Perhaps you can help.
Q. Do the Disciple Hook codes support Interface 1 to such an exten that programs can load/save include from Machine Code?
A. I don't think that the Disciple is microdrive compatible to such an extent. As far as I know programs which SAVE/LOAD from Machine code such as TAsword III do not work straight off. Do you have any info on this point? This is most NB to users of Devpac, Pascal, Omnicalc 2 and Beta basic. PROBLEM

Bart van Leeuwen would like to know how do you eliminate the Cias and the Pirate in the adventure game HEROS OF KARN. do you know?

Ettiene Mybergh from Ermelo has started to experiment with the I/O ports on his Spectrum. He would like more information about the different addresses that he should use to activate the different address, data and control busses. He would also like more information on all the functions of all the busses at the back of the Spectrum.

NAME ______________________ TEL ______________________ MEMBER REF # __

ADDRESS ____

To: INFORMATION ENTERPRISES, PO Box 35644, Menlo Park, 0102

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Expansion pack	3.45	5.75
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Timex Printer	4.45	5.50
Joystick	1.80	2.30
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QL computer	8.00	14.50
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Spectrum + 2	10.00	13.80
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Membrane	2.30	2.80
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Box of paper (2000)	3.00	5.00
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